



Reappearance of *Taenia ovis krabbei* muscle cysts in a roe deer (*Capreolus capreolus*) in Denmark after 60+ years, with a possible role of a grey wolf (*Canis lupus*) as definitive host

Al-Sabi, Mohammad Nafi Solaiman; Chriél, Mariann; Holm, Elisabeth; Jensen, Tim Kåre; Ståhl, Marie ; Enemark, Heidi L.

Publication date:
2013

[Link back to DTU Orbit](#)

Citation (APA):

Al-Sabi, M. N. S., Chriél, M., Holm, E., Jensen, T. K., Ståhl, M., & Enemark, H. L. (2013). *Reappearance of Taenia ovis krabbei muscle cysts in a roe deer (Capreolus capreolus) in Denmark after 60+ years, with a possible role of a grey wolf (Canis lupus) as definitive host*. Abstract from 24th International Conference of the World Association for the Advancement of Veterinary Parasitology, Perth, Australia.

General rights

Copyright and moral rights for the publications made accessible in the public portal are retained by the authors and/or other copyright owners and it is a condition of accessing publications that users recognise and abide by the legal requirements associated with these rights.

- Users may download and print one copy of any publication from the public portal for the purpose of private study or research.
- You may not further distribute the material or use it for any profit-making activity or commercial gain
- You may freely distribute the URL identifying the publication in the public portal

If you believe that this document breaches copyright please contact us providing details, and we will remove access to the work immediately and investigate your claim.

Reappearance of *Taenia ovis krabbei* muscle cysts in a roe deer (*Capreolus capreolus*) in Denmark after 60+ years, with a possible role of a grey wolf (*Canis lupus*) as definitive host

Mohammad NS Al-Sabi¹, Mariann Chriél¹, Elisabeth Holm¹, Tim K Jensen¹, Marie Ståhl¹, Heidi L Enemark^{1*}

¹Technical University of Denmark, DENMARK

Abstract:

Taenia ovis krabbei has a semi-sylvatic life cycle with carnivore definitive hosts and cervid intermediate hosts. Cervids become infected by foraging on pasture contaminated with the eggs. Larval stages usually develop in heart and skeletal muscles causing pathological changes and severe illness^{1,2}. Meat infected with *T. o. krabbei* entails no zoonotic risk, but for aesthetic reasons the infected meat is usually discarded³. Here, we report the reappearance of *T. o. krabbei* in a roe deer in Denmark after more than 60 years. The cysticerci were diagnosed after histology, morphology⁴ and sequencing of the *cox1* gene⁵. Shortly after this discovery, a wolf died in a nearby locality, and worms of *T. o. krabbei* were recovered from its intestine. By phylogenetic analysis, the Danish roe deer and wolf isolates were clearly grouped together with other isolates of *T. o. krabbei* from wolves in Fennoscandinavia. In mainland Europe, *T. o. krabbei* is primarily a parasite of wolves^{6,7}. The unexpected reappearance of a wolf in Denmark in 2012 after almost two decades of absence could be a mere coincidence, but may also explain the introduction of this parasite along with the wolf. Domestic dogs, on the other hand, could play a role in transmission of *T. o. krabbei* in the area, but this has yet to be tested. Deer infections with *T. o. krabbei* were previously reported in the German county that borders Denmark³, and may have spread from there. But it is also possible that deer infections were already present, but unnoticed, in other areas of Denmark. The helminth burden of invading animals is normally expected to decrease⁸. However, invading wolves can support their establishment in new areas by carrying worms of *T. o. krabbei* that cause severe illness in native deer that subsequently become prey to the wolves.

Acknowledgements:

The work was financed by the Danish Nature Agency (SNS-304-00001), Aarhus University (51-00084) and the Technical University of Denmark (55013-0014).

References:

- ¹Christensen, N.O. et al. 1949. Aarskr. KVL. 1949, 1-73. ²Sweatman, G.K. et al. 1962. Can. J. Zool. 40, 1287-1311. ³Rehbein, S. et al. 2000. Zschr. Jagdwiss. 46, 248-269. ⁴Loos-Frank, B., 2000. Syst. Parasitol. 45, 155-183. ⁵Tamura, K. et al., 2011. Mol. Biol. Evol. 28, 2731-2739. ⁶Bagrade, G. et al. 2009. J. Helminthol. 83, 63-68. ⁷Moks, E. et al. 2006. J. Wildlife Dis. 42, 359-365. ⁸Torchin, M.E. et al. 2003. Nature 421, 628-630.